


FEMCard analysis result

20.10.15


Project data	
Projectname	isotropic_material_scattered_elastoplastic_1D
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\A_scattered_elastoplastic\1D
Created at	07.06.2015
Maker	Parsolve GmbH
Comment	Synthetic scattered measurement data for elastoplastic material
Material model	ISOTR 1D SMALL strain von MISES PLASTICITY (nonlinear isotropic hardening)

Test informations


Test 1

Color	
Number	1
Name	Pl_Mat_Uniax_Test_1
Folder	F:\A_synth_meas\A_isotropic_material\A_scattered_elastoplastic\1D\Pl_Mat_Uniax_Test_1.txt
Load type	Isotropic static SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.34008

Test 2


Color	
Number	2
Name	Pl_Mat_Uniax_Test_2
Folder	F:\A_synth_meas\A_isotropic_material\A_scattered_elastoplastic\1D\Pl_Mat_Uniax_Test_2.txt
Load type	Isotropic static SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.14771


Test 3

Color	
Number	3
Name	Pl_Mat_Uniax_Test_3
Folder	F:\A_synth_meas\A_isotropic_material\A_scattered_elastoplastic\1D\Pl_Mat_Uniax_Test_3.txt
Load type	Isotropic static SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.48195

FEMCard analysis result

20.10.15

Test 4	
Color	
Number	4
Name	PI_Mat_Uniax_Test_4
Folder	F:\A_synth_meas\A_isotropic_material\A_scattered_elastoplastic\1D\PI_Mat_Uniax_Test_4.txt
Load type	Isotropic static SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1

Test 5	
Color	
Number	5
Name	PI_Mat_Uniax_Test_5
Folder	F:\A_synth_meas\A_isotropic_material\A_scattered_elastoplastic\1D\PI_Mat_Uniax_Test_5.txt
Load type	Isotropic static SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.68973

Tests weight TR

Test 1		
Start	End	Value
0	53	32.5
54	106	11.5
107	160	5.86
161	213	3.2
214	267	1.63
268	320	1

Test 2		
Start	End	Value
0	53	30.4
54	106	11.2
107	160	5.82
161	213	3.09
214	267	1.57
268	320	1

Test 3		
Start	End	Value
0	53	32.4

FEMCard analysis result

20.10.15

54	106	11.4
107	160	5.85
161	213	3.27
214	267	1.68
268	320	1

Test 4		
Start	End	Value
0	53	34.5
54	106	11.8
107	160	5.65
161	213	2.79
214	267	1.48
268	320	1

Test 5		
Start	End	Value
0	53	29.3
54	106	10.6
107	160	5.58
161	213	3.26
214	267	1.74
268	320	1

Tests weight SD

FEMCard analysis result

20.10.15

Model parameter					
Parameter	Fix	Lower limit	Upper limit	Start value	Result
E		1000	300000	150000	69890
Y_0		20	200	150	104.3478
Y_inf		30	300	300	181.41
Omega		50	800	200	175.4955
H		10	10000	1800	1535.187

Processing parameter	
Max. number of steps	200
LM start value	0.1
Max. error sum of squares	1e-05

Processing results	
Steps	13
Least squares sum	0.0331746

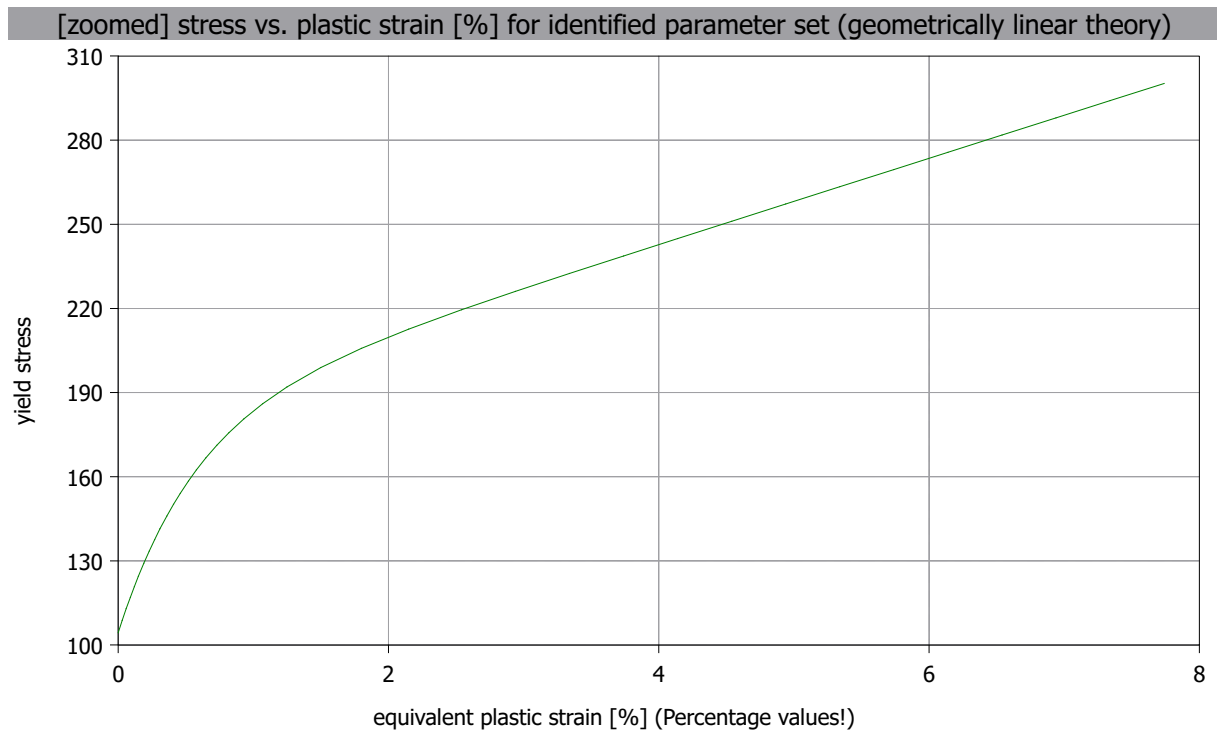
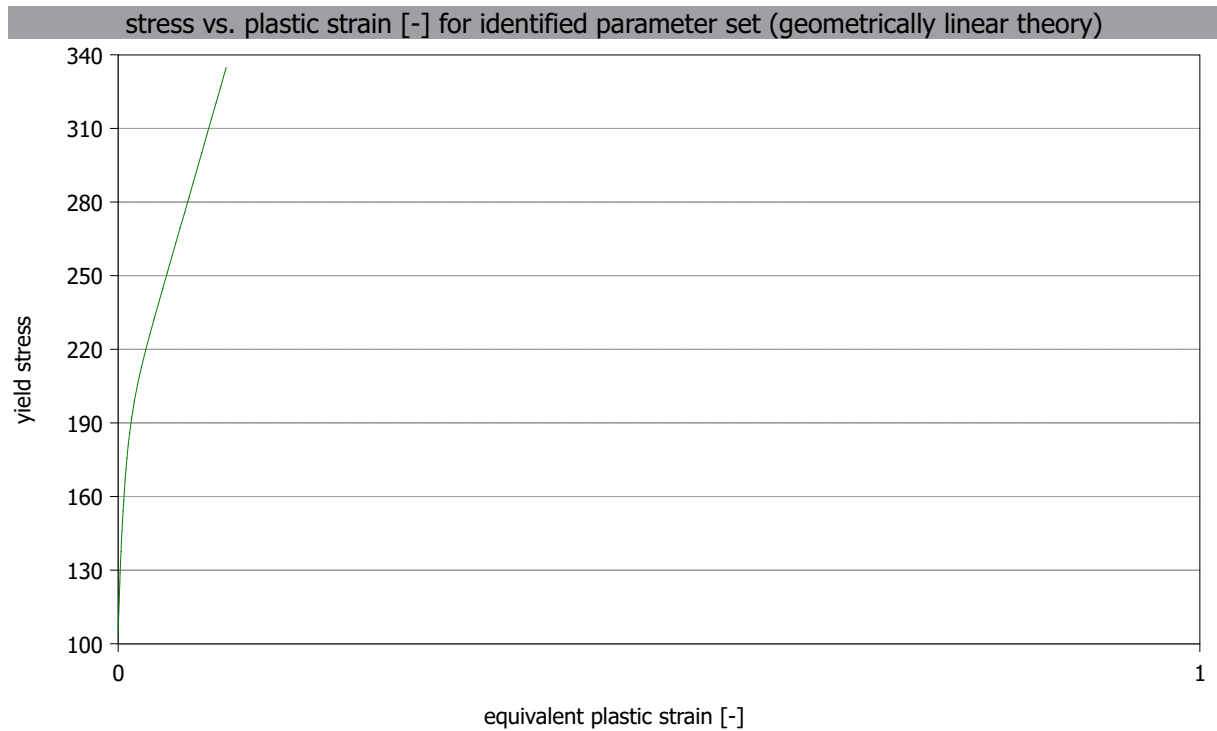
Correlation matrix					
	E	Y_0	Y_inf	Omega	H
E	1	-0.894	-0.543	-0.435	-0.355
Y_0	-0.894	1	0.636	0.0971	0.165
Y_inf	-0.543	0.636	1	-0.375	-0.576
Omega	-0.435	0.0971	-0.375	1	0.792
H	-0.355	0.165	-0.576	0.792	1

stress vs. plastic strain [-] for identified parameter set (geometrically linear theory)	
yield stress	equivalent plastic strain [-]
104.3478	0
108.7606	0.0003
112.9707	0.0006
116.9885	0.0009
120.8239	0.0012
124.4862	0.0015
129.1153	0.0019
133.4722	0.0023
137.5754	0.0027
141.4421	0.0031

FEMCard analysis result

20.10.15

145.9671	0.0036
150.1765	0.0041
154.0967	0.0046
158.4534	0.0052
162.4667	0.0058
166.7605	0.0065
171.2146	0.0073
175.7232	0.0082
180.6203	0.0093
186.0517	0.0107
192.0071	0.0125
198.8968	0.015
205.7704	0.018
212.6457	0.0215
219.5106	0.0254
226.1019	0.0294
232.4659	0.0334
238.7173	0.0374
244.9129	0.0414
251.0808	0.0454
257.235	0.0494
263.3824	0.0534
269.5265	0.0574
275.6689	0.0614
281.8105	0.0654
287.9516	0.0694
294.0925	0.0734
300.2334	0.0774
306.9883	0.0818
313.7431	0.0862
320.498	0.0906
327.2528	0.095
334.0076	0.0994
334.7752	0.0999

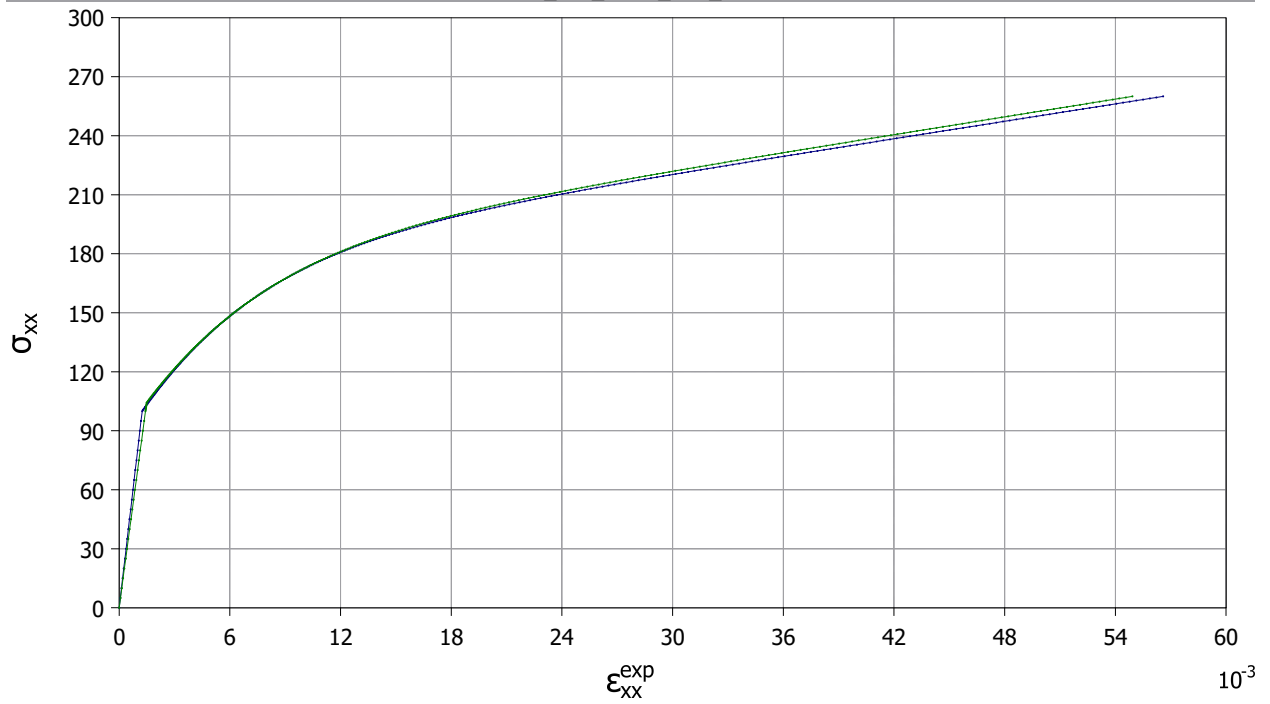


FEMCard analysis result

20.10.15

Verification

PI_Mat_Uniax_Test_1



PI_Mat_Uniax_Test_2

